March 28, 2023

Docket No: EPA-HQ-OAR-2015-0072

To Whom it May Concern:

We are writing today to comment on Docket Number EPA-HQ-OAR-2015-0072 for the Proposed Rule: Reconsideration of the National Ambient Air Quality Standards for Particulate Matter. **We are encouraged by the proposed strengthening of the annual National Ambient Air Quality Standard (NAAQS) for particulate matter (PM2.5) but would like to see the EPA go even further to protect public health by making the new standard 8 µg/m3 and by issuing a stricter 24-hour (daily) standard as well.**

Air Alliance Houston (AAH) is a non-profit advocacy organization that works to reduce the public health impacts of air pollution and advance environmental justice in the greater Houston area. We use research, education, and advocacy to address the primary sources of air pollution, including industry, mobile emissions, and smaller backyard polluters. As such, we are concerned about the impact of PM2.5 on the health of our community, and we believe the EPA has an unprecedented opportunity to save lives by issuing a stronger standard. Our reasons for this are outlined below:

1) A PM2.5 standard of 8 µg/m3 would save thousands of lives.

According to the EPA's Regulatory Impact Analysis (RIA) released in December 2022, lowering the annual PM2.5 standard to 8 µg/m3 would result in 9,200 prevented adult mortalities (ages 18-99) of which a large proportion (4,400 cases) are among the elderly (ages 65-99). This is a drastic increase in prevented deaths compared to the proposed low end of 9 µg/m3, which would prevent less than half of that value: only 4,200 prevented adult mortalities (2,000 among the elderly).

Moreover, other analyzed benefits of adopting a stricter PM2.5 standard include an average reduction of:

- 1,120 hospital admissions (cardiovascular and respiratory)
- 4,100 ED visits (cardiovascular and respiratory)
- 143 Acute Myocardial Infarctions
- 72 cardiac arrests
- 2,170 hospital admissions (Alzheimer's and Parkinson's Disease)
- 320 lung cancer cases

- 270 stroke cases
- 75,000 hay fever/rhinitis cases
- 11,000 asthma onset cases
- 1,600,000 asthma symptoms
- 580,000 lost work days
- 3,400,000 minor restricted-activity days

The analysis also included various estimations of monetized benefits of stricter PM2.5 standards compared to the current limit and provided an economic value of avoided PM2.5-related morbidities and premature deaths if a more protective standard were adopted and attained. For a standard of 8 µg/m3 annually and 35 µg/m3 24-hour, these estimated benefits ranged from $41 billion to $95 billion (2017).

These results are in line with recommendations made by the Clean Air Scientific Advisory Committee (CASAC), a federal advisory committee to the EPA, which also stressed the need for standards stronger than those currently proposed, stating that "the majority of CASAC members find that an annual average in the range of 8-10 µg/m3 would be appropriate….and the majority of CASAC members favor lowering the 24-hour standard" as well, citing "substantial epidemiologic evidence from both morbidity and mortality studies that the current standard is not adequately protective." Ultimately, they recommend a range of 25-30 µg/m3 for the 24-hour PM.2.5 standard as adequately protective.

Furthermore, the World Health Organization (WHO) recommends its evidence-based air quality guidelines developed to help countries achieve air quality that protects public health. These limit value recommendations are based on systematic literature reviews, expert evaluation of current scientific evidence, and rigorous evaluation methods. In 2021, they published updated air quality guidelines incorporating a strengthened and more expansive body of evidence demonstrating the various public health impacts of air pollution at even lower concentrations than previously understood. In their updated guidelines, they recommend an annual PM2.5 target of 5 µg/m3 and a 24-hour standard of 15 µg/m3 - further lowered from the WHO 2005 guidelines.

2) Houstonians are suffering from PM2.5 pollution, particularly in communities of color; a stricter standard is needed to reverse decades of environmental injustices.

The most recent "State of the Air" report by the American Lung Association highlighted Houston's unsatisfactory record in PM pollution, particularly tracking lethal short-term spikes. The report gave the city a D grade in 24-hour particle pollution. Moreover, a recent national analysis of PM2.5 data recorded between 2011-2015 by the Guardian ranked Houston as the 6th worst hotspot for fine particle air pollution in the US. The research

findings also highlighted how particulate matter hotspots within the city run along socioeconomic lines, with Black and Hispanic neighborhoods exposed to the highest concentrations of PM2.5. In the Houston area, these largely include communities like Galena Park, Jacinto City, Manchester, and others that border sprawling oil and petrochemical complexes as well as neighborhoods like Fifth Ward, Settegast, and Kashmere Gardens that are surrounded by massive freeways and railyards. These communities of color thus bear the brunt from multiple sources of air pollution that include chemical industries, vehicular tailpipe emissions, backyard polluters, and railyards all of whom release not only particulate matter but a slew of other criteria air pollutants and hazardous air pollutants (HAPs) as well.

As a result, residents in these very same neighborhoods suffer disproportionate health impacts in the form of increased asthma rates, heart disease, respiratory illnesses, and mortality. The EPA's RIA revealed a stark disparity between the national average PM2.5-attributable mortality rates of different demographic groups. Hispanic residents experience a 25% higher mortality rate than White residents, and Black residents suffer a 300% higher rate:

Race/Ethnicity	12/35	10/35	10/30	9/35	8/35
White	186	185	185	184	181
American Indian	190	188	188	187	185
Asian	165	160	160	158	154
Black	581	579	578	572	559
Non-Hispanic	217	215	215	214	210
Hispanic	236	232	232	230	226

Figure 6-11 Heat Map of National Average Annual Total Mortality Rates (per 100K) for Demographic Groups for Current and Alternative PM NAAQS Levels After Application of Controls

The RIA analysis also estimates that the rate of PM2.5-attributable mortality would decrease for all races/ethnicities when moving to stricter standards. The reductions in mortality rates are larger for all other races compared to Whites. Overall, Black populations would experience the greatest reduction in mortality rate with a stricter PM standard of 8 µg/m3 for the annual standard and 35 µg/m3 for the 24-hour standard:

Race/Ethnicity	12/35-10/35	12/35-10/30	12/35-9/35	12/35-8/35
White	1.0	1.2	2.6	6.0
American Indian	1.4	1.6	2.6	5.2
Asian	4.8	5.0	7.5	11.9
Black	3.4	3.6	11.5	25.6
Non-Hispanic	1.2	1.3	3.2	7.3
Hispanic	4.1	4.3	6.5	11.0

Figure 6-15 Heat Map of National Average Annual Mortality Rate Reductions (per 100k) for Demographic Groups When Moving from Current to Alternative PM NAAQS Levels After Application of Controls

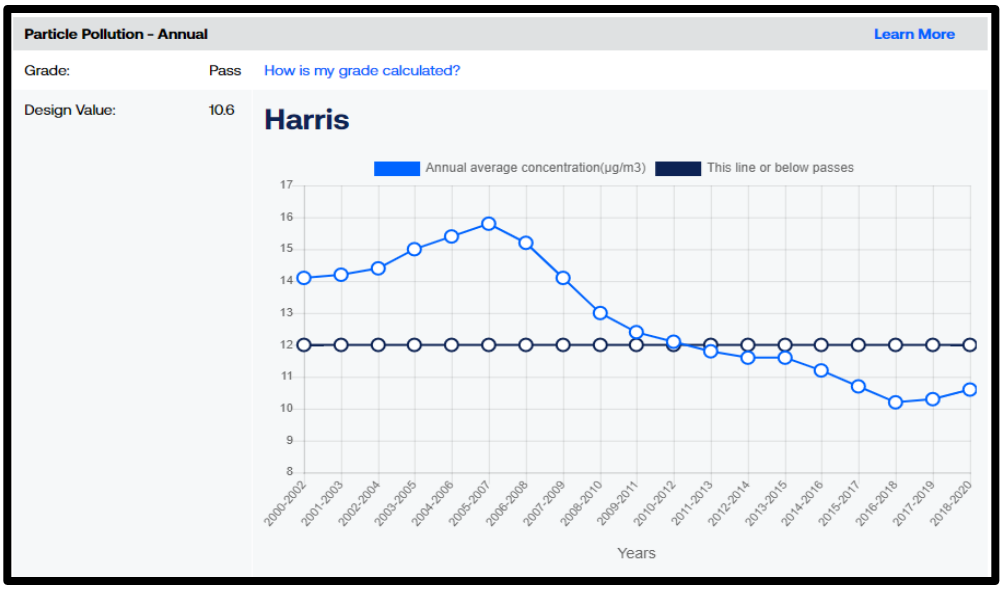
The same results were observed regionally, and total PM2.5-attributable mortality rates in the reference populations were shown to decrease under stricter PM2.5 standard levels in all regions, with the highest mortality rate reductions again observed in Black populations.

This is further validated by similar research by the Environmental Defense Fund released last year highlighting this disparity, revealing that Black Americans 65 and older are three (3) times more likely to die from exposure to fine particle air pollution than White Americans over 65. The same analysis also found that stronger PM limits would save thousands of lives each year and deliver significant health benefits, especially for Black, Hispanic, and low-income communities.

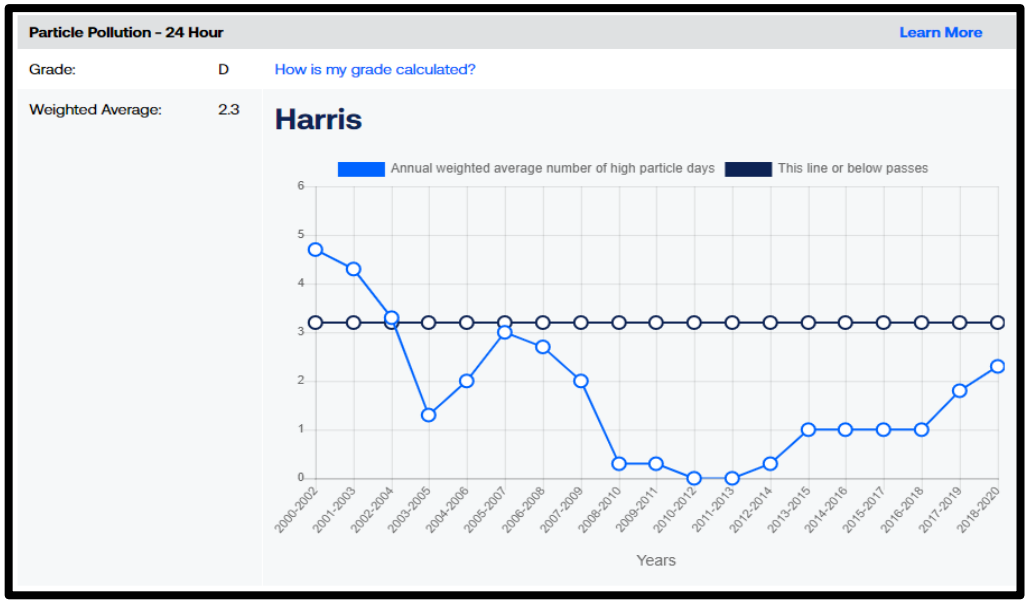
3) Efforts to curb PM2.5 pollution up to now have failed due to our lax Texas state regulatory agency; we need federal intervention to see real change.

Lastly, a redesignation of the Houston area's attainment status for the NAAQS PM2.5 standard is long overdue. Though the Houston MSA as a whole is currently designated as "unclassifiable/attainment" as of 2015 based on the federal reference monitors within the region, there continue to remain significant areas within the city that suffer unacceptably high concentrations of PM2.5, especially those situated near highways, railyards, and industrial facilities. The Houston Galveston Area Council (HGAC) admits to this in its HGB PM2.5 Path Forward Update, stating that "there are…indications that increased PM2.5 concentrations may exist within the HGB region and beyond the existing monitoring network."

Furthermore, data from the American Lung Association reveals that, since 2016-2018, particulate matter pollution has been worsening in the Harris County area. After a continuous decline in average annual concentrations lasting from 2005-2007, levels have been increasing steadily over the last seven years.



This is paired with a similar increase in the annual weighted average number of high particle days, which has jumped since 2016-2018:



These trends show no indication of improvement anytime soon, especially under a state regulatory environment that prioritizes polluters' economic needs and does not consider the cumulative impact of pollution. Federal intervention thus seems to be the only avenue left to obtain improvements at a level that benefits communities and neighborhoods overlooked by the regulatory monitors. Therefore, a redesignation to "severe nonattainment" due to a reduced standard would be a welcome change, as it will compel our state regulatory agency to take equally severe and meaningful changes to bring our

region's polluters into compliance, actions they will not take unless compelled to by the new standard.

In closing, we join with the Sierra Club, American Lung Association, Moms Clean Air Force, EarthJustice, Climate Action Coalition, and hundreds of other groups to call on the EPA to:

1. Strengthen the PM2.5 standard from 12 µg/m3 to 8 µg/m3; and
2. Strengthen the current 24-hour (daily) standard from 35 µg/m3 to 25 µg/m3.

Thank you for the opportunity to provide these comments. Air Alliance Houston (AAH) is committed to working with our community members and partners to advance public health and environmental justice in Houston. If there are questions about these comments, please feel free to contact the individuals listed below at any time:

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